

# HIV infection in patients attending clinics for sexually transmitted diseases in England and Wales 1988

A collaborative study by consultants in genitourinary medicine and The Public Health Laboratory Service

## Abstract

A national study of the prevalence of HIV antibody in homosexual and heterosexual patients attending sexually transmitted disease clinics in the years 1985-7 was continued in 1988. Among homosexual men in two clinics in south east England HIV antibody was less prevalent in 1988 (30 (7.1%) of 420) than in 1987 (81 (14.6%) of 556) but was more prevalent in 1988 in other regions where the corresponding findings were 48 (4.9%) of 975 and 36 (2.8%) of 1291. HIV antibody prevalence continued to be higher in homosexual men aged 25 or more years or with one or more specified minor complaints. The trend was similar in heterosexual patients: among men in the south east in 1988 HIV antibody was found in 1 (0.1%) of 948 but in 10 (1.0%) of 962 in 1987 and among women in 1 (0.1%) of 1043 in 1988 but in 7 (0.7%) of 949 in 1987. In other regions the corresponding findings for men were 2 (0.1%) of 5620 in 1988 and 3 (0.1%) of 5312 in 1987 and for women were 7 (0.2%) of 4483 in 1988 and 1 (0.1%) of 4778 in 1987. The two most notable differences between findings in 1987 and 1988 were that in the south east the number of heterosexual intravenous drug abusers with HIV antibody decreased from five to one among men and from five to none among women and for the first time in the study HIV antibody positive women without known risk factors were identified—1 (0.1%) of 1043 in the south east and 2 (0.04%) of 4483 in other regions. Refusals to participate continued to increase but, as before, comparison of patients who agreed and refused in terms of age, the presence of symptoms suggesting HIV infection, travel abroad, and number of sexual partners in the past twelve months showed little evidence of selective bias that might have artificially reduced the prevalence.

The prevalence of HIV antibody in patients attending sexually transmitted disease clinics, who have

had on average more sexual partners than the general population, should indicate the upper limit of prevalence in the general population over time and serve as an early warning system of the spread of the infection.

The study was made of patients in clinics in four districts in 1985 and continued in seven in 1986, 14 in 1987, 1988 and 1989. The participants are patients attending clinics for sexually transmitted diseases (excluding heterosexuals attending only for HIV tests) who are invited to complete a study record and, after counselling, to consent to an HIV antibody test. The results for the years 1985-7 have been published.<sup>1</sup>

## Methods

These have been described.<sup>1</sup> In 1988 the inquiry about sexual partners was changed from the average number in a month to the number in the past twelve months. Also the answer to a question about past and present intravenous drug abuse, asked by the physician, was recorded.

## Results

### HOMOSEXUAL AND BISEXUAL MEN

In 1988 the prevalence of HIV antibody in homosexual (including bisexual) men in two clinics in the south east decreased significantly from 81 (15%) of 556 in 1987 to 30 (7%) of 420; but in other regions the change from 36 (3%) of 1291 in 1987 to 48 (5%) of 975 was slight. The numbers presenting declined in both the south east and other regions; previous differences in HIV antibody prevalence between bisexuals and homosexuals were no longer evident (table 1).

In the south east and in other regions HIV antibody prevalence was five times higher among patients with one or more of the specified complaints than among those with none and three times higher among men of 25 years or more than among younger men (table 2). There was little difference in prevalence between those who had and had not travelled abroad in the past two years or between

Table 1 Prevalence of HIV antibody in bisexual and homosexual men

Year	No of towns	Participation rate (%) <sup>*</sup>	Bisexual	Homosexual	Total
South East Thames					
1986	2	98	6.0 (5/83) <sup>†</sup>	17.4 (60/345)	15.2 (65/428)
1987	2	92	9.5 (13/137)	16.2 (68/419)	14.6 (81/556)
1988	2	74	4.1 (4/98)	8.1 (26/322)	7.1 (30/420) <sup>†</sup>
Other regions					
1986	5	91	4.0 (5/125)	6.8 (36/529)	6.3 (41/654)
1987	12	89	0.7 (2/303)	3.4 (34/988)	2.8 (36/1291)
1988	12	83	5.5 (14/254) <sup>†</sup>	4.7 (34/721)	4.9 (48/975) <sup>†</sup>

<sup>\*</sup>Percentage of patients willing to complete study record and be tested.

<sup>†</sup>p = 0.01.

those who had a history of intravenous drug abuse and those who had not or between those who reported having had between one and five sexual partners in the previous twelve months and those with more than five. The highest prevalence—21%—was found among 24 men in the south east who reported no sexual partners in the previous twelve months.

Multivariate analysis confirmed age and the presence of minor complaints as independent variables.

#### REFUSAL TO PARTICIPATE

Refusal to participate increased in 1988: in the south east 420 (74%) of the 568 invited to participate accepted, 133 (23%) completed study records but refused the HIV antibody test and 15 (3%) refused completely. In other regions 975 (83%) of 1172 invited, accepted, 176 (15%) completed study records but refused the test and 21 (2%) refused completely.

In the south east significantly more of those who agreed to the HIV antibody test had one or more specified complaints, had travelled abroad in the

previous two years, had a history of intravenous drug abuse or had more than five sexual partners in the past twelve months but there was no apparent age difference. In other regions the two significant differences were in the other direction, that is, more of those who refused had travelled abroad recently or were older than those who accepted (table 3). The 36 men who refused completely and participants matched for age sex and sexual preference showed no differences in respect of past attendances at the clinic and in the distribution of their diagnoses (table 4).

#### HETEROSEXUAL PATIENTS

Table 5 shows the prevalence of antibody to HIV in heterosexual patients.

In the south east HIV antibody prevalence among heterosexual men declined from 10 (1.0%) of 962 in 1987 to 1 (0.1%) of 948 in 1988 and the number of positive intravenous drug abusers among them decreased from five in 1987 to one. In other regions there was little change in HIV antibody prevalence among heterosexual men—from 3 (0.1%) of 5312 in 1987 to 2 (0.1%) of 5620 and both men in 1988 were residents of areas of high HIV prevalence abroad.

Table 2 Prevalence of HIV antibody in homosexual and bisexual men by age and details of study record 1988

No of towns	Age (years)		Complaints <sup>*</sup>		Travel abroad <sup>†</sup> in past 2 years		No of partners in past 12 months <sup>‡</sup>			IVDA <sup>§</sup> history		
	<25	≥25	None/NS	≥1	No/NS	Yes	0	1-5	>5	NS	No/NS	Yes
South East Thames												
2	2.7 (3/113)	8.8** (27/307)	4.8 (18/372)	25.0   (12/48)	6.8 (15/222)	7.6 (15/198)	20.8 (5/24)	6.4 (19/298)	6.5 (6/92)	— (0/6)	7.7 (27/350)	4.3 (3/70)
Other regions												
12	2.2 (7/321)	6.3   (41/654)	3.3 (27/827)	14.2   (21/148)	4.4 (28/634)	5.8 (20/341)	5.5 (3/55)	4.9 (39/790)	4.7 (6/129)	— (0/1)	4.7 (40/851)	6.5 (8/124)

<sup>\*</sup>Weight loss, night sweats, debility, diarrhoea & lumps in or under the skin.

<sup>†</sup>1988 Question was changed from number of partners/month to number of partners in past 12 months.

<sup>‡</sup>Outside Britain.

<sup>§</sup>Intravenous drug abuse.

|p = 0.01.

\*\*p = 0.05.

NS = not stated.

Table 3 Age and details of study record in patients agreeing and refusing to be tested for HIV antibody

No (%) of patients												
Region	Agreed to HIV antibody tests	Number	Age $\geq 25$ years	With $\geq 1$ complaint*		Travelled abroad in past 2 years		IVDA** history		With $\geq 5$ sexual partners in past 12 months		
Homosexual												
South East Thames	Yes	420	(73.1)	307	(11.4)†	48	(47.1)†	198	(16.7)§	70	(21.9)†	92
	No	133	(72.2)	96	(1.5)	2	(16.5)	22	(9.0)	12	(6.8)	9
Other	Yes	975	(67.1)§	654	(15.2)	148	(35.0)†	341	(12.7)	124	(13.2)	129
	No	176	(76.1)	134	(10.2)	18	(47.2)	83	(10.8)	19	(12.5)	22
Heterosexual Men												
South East Thames	Yes	948	(63.4)	601	(7.1)†	67	(40.1)†	380	(7.1)†	67	(8.2)†	78
	No	668	(65.0)	434	(1.3)	9	(24.1)	161	(1.8)	12	(3.9)	26
Other	Yes	5620	(57.5)	3229	(9.4)	528	(48.4)	2772	(2.0)†	111	(7.3)	410
	No	1584	(55.6)	881	(8.4)	133	(48.2)	763	(0.8)	13	(6.8)	107
Women												
South East Thames	Yes	1043	(51.3)	535	(7.3)†	76	(35.3)§	368	(4.9)†	51	(3.0)†	31
	No	779	(48.0)	374	(4.1)	32	(30.2)	235	(0.6)	5	(0.5)	4
Other	Yes	4483	(45.0)	2017	(13.8)	620	(45.4)	2034	(1.5)†	68	(3.6)†	161
	No	1462	(42.4)	620	(13.5)	198	(48.3)	706	(0.3)	4	(1.6)	24

\*Weight loss, night sweats, debility, diarrhoea and lumps in or under the skin.

†p = 0.01. §p = 0.05 difference between patients who did and did not agree to tests.

‡ Intravenous drug abuse.

In the south east prevalence declined among women also, from 7 (0.7%) of 949 in 1987 to only 1 (0.1%) of 1043 in 1988 and the number of positive drug abusers fell from five in 1987 to one in 1988. In contrast, prevalence among women increased in other regions: whereas only 1 (<0.1%) of 4778 was HIV antibody positive in 1987 7 (0.2%) of 4483 were positive in 1988; five of the seven belonged to risk groups—one intravenous drug abuser, three sexual contacts of known positives (two intravenous drug abusers and one haemophiliac) and one from an area of high HIV prevalence abroad.

Three HIV antibody positive women—one in the south east and two in other regions—did not belong to any risk group (other than that of being an attender at the clinic). All claimed less than five sexual partners in the past year and that, to their knowledge, none of the partners belonged to a risk group. One of the women and some partners of the other two had been abroad in the previous two years. Anti-HIV tests, made at the clinic, of several partners of one woman proved negative and the sole partner in the past two years of another woman was said to have been found negative by anti-HIV tests made elsewhere. The prevalence of this "no risk" group in the survey participants was 1 (0.1%) of 1043 in the south east and 2 (0.04%) of 4483 in other regions.

#### REFUSAL TO PARTICIPATE

Acceptance rates among heterosexual men declined: in 1988 1768 heterosexual men in SE England were invited to participate; 948 (54%) accepted and 668 (38%) refused HIV antibody tests but completed study records: the corresponding numbers in other

regions were 7329, 5620 (77%) and 1584 (22%). There was a higher rate of acceptance of tests by patients in the south east who had a history of intravenous drug abuse or of travel abroad or with specified complaints or with 5 or more sexual partners: the age distribution was similar. In other regions there were no clear differences (table 3).

Acceptance rates in 1988 decreased among women also. In 1988 2045 women in the south east were invited to participate; 1043 (51%) accepted and 779 (38%) refused the test but completed study records. Corresponding numbers in other centres were 6077, 4483 (74%) and 1462 (24%). There was a higher rate of acceptance by patients in the south east who had a history of intravenous drug abuse or of travel abroad or with specified complaints or 5 or more sexual partners. The age distribution was similar. In other regions there were no clear differences (table 3).

The 269 heterosexual men and 350 women who refused to participate in the study did not differ, in respect of past attendances at the clinic and in the distribution of their present diagnoses, from participants matched for age, sex and sexual preference (table 4).

#### Discussion

In any voluntary study there is a possibility that self-exclusion, by patients at high risk, could lead to an artificially low prevalence and evidence of this effect in a study of HIV infection in the USA has been presented.<sup>2</sup> In the present investigation it was not possible to make anti-HIV tests on sera from patients who had refused them but several attributes of

Table 4 Patients who refused to participate and matched\* participants by diagnoses at clinic before and in 1988

Patients	% (No) with $\geq 1$ previous diagnoses	Mean No† of previous diagnoses	% (No) of diagnoses of:		
			Syphilis	Gonorrhoea	Other genital infection
Homosexual men:					
Accepting (n = 36)	75.0 (27)	1.4	5.4 (2)	16.2 (6)	27.0 (10)
Refusing (n = 36)	69.4 (25)	1.2	12.9 (4)	3.2 (1)	38.7 (12)
Heterosexual men:					
Accepting (n = 269)	53.9 (145)	1.2	1.2 (2)	11.6 (20)	51.7 (89)
Refusing (n = 269)	54.3 (146)	1.2	(0)	11.9 (20)	57.1 (96)
Women:					
Accepting (n = 350)	48.0 (168)	1.2	(0)	6.5 (13)	58.2 (117)
Refusing (n = 350)	53.7 (188)	1.2	(0)	10.1 (23)	67.5 (154)

\*For age, sex and sexual preference.

†For patients with any previous diagnoses.

patients who had been invited to participate could be analysed. Comparisons, of patients who completed study records, between those who did and did not choose to be tested showed that for all groups (homosexual, heterosexual men and women) in the south east there was a statistically significant trend in the opposite direction, that is, a greater acceptance of anti-HIV tests by those with one or more attributes that might cause an individual to suspect that he or she might have acquired the infection, for example history of intravenous drug abuse, travel abroad, more than the average number of sexual partners, minor complaints that might indicate HIV infection. In other regions the general trend was similar though not so pronounced and there was only one group in which the possibility of self exclusion appeared—homosexual men who had travelled abroad. However, the test results indicated only two variables of influence on anti-HIV prevalence in 1988—age and the existence of specified complaints. The rates were higher among homosexual men aged at least 25 years or those with one or more minor complaints: estimates, based on these variables, to take account of the participants who had not been tested, gave rates differing little from those determined by the tests alone. Among heterosexuals the prevalence was too

low to allow similar estimates but in view of the trend shown by the recorded data the increasingly high test refusal rate was more probably the result of general apprehension about anti-HIV tests than of selective bias. Moreover the absence of differences between patients who refused the survey completely and matched participants in respect of present diagnoses and past attendance at the clinic supports this view.

The significant fall in the prevalence of anti-HIV in homosexual and bisexual men and in the annual number presenting at the clinics in the south east support the general belief that sexual behaviour has been modified in this group. Nevertheless, the findings suggest that greater caution is needed since 7% of attenders at the clinics in the south east were positive for the first time in 1988 and in other regions, though a smaller number presented in 1988, the prevalence rate was higher than in the previous year.

The decline in prevalence among heterosexual men and women in the south-east in 1988 resulted from a sharp decrease in the number of positive intravenous drug abusers and those with sexual contact in areas of high prevalence abroad. This suggests that public warning and the provision of clean equipment for intravenous drug abusers have been having the desired effect in the south-east. In

Table 5 Prevalence of HIV antibody in heterosexual patients in study 1986–8

		% (No) Positive for HIV antibody			
Year	No of towns	Participation rate (%)*	Men	Participation rate (%)*	Women
South East Thames					
1986	2	98	3.0 (7/230)	99	1.3 (3/233)
1987	2	69	1.0 (10/962)	68	0.7 (7/949)
1988	2	54	0.1 (1/948)	51	<0.1 (1/1043)
Other regions					
1986	5	87	0.2 (2/950)	95	0.4 (3/752)
1987	12	84	<0.1 (3/5312)	85	<0.1 (1/4778)
1988	12	77	<0.1 (2/5620)	74	0.2 (7/4483)

\*Percentage of invited patients willing to complete study record and be tested.

Other conditions	Mean No of diagnoses in 1988	% (No) of diagnoses of:			
		Syphilis	Gonorrhoea	Other genital infection	Other conditions
51.4 (19)	1.2	5.6 (2)	8.3 (3)	16.7 (6)	69.4 (25)
45.2 (14)	1.2	5.6 (2)	(0)	38.9 (14)	55.6 (20)
35.5 (61)	1.1	0.7 (2)	5.2 (14)	55.4 (149)	38.7 (104)
31.0 (52)	1.1	0.7 (2)	4.8 (13)	59.9 (161)	34.6 (93)
35.3 (71)	1.2	0.6 (2)	5.4 (19)	60.6 (212)	33.4 (117)
22.4 (51)	1.2	0.6 (2)	6.6 (23)	65.1 (228)	27.7 (97)

other areas, where the prevalence was low in 1987, there was no change for heterosexual men and though the number of positive women increased from one to seven in 1988 and two were sexual contacts of drug abusers only one was a intravenous drug abuser.

In sharp contrast with the decrease in the number of positive drug abusers among the participants in 1988 was the first appearance in both the south east and other regions, of HIV antibody positive women without risk factors other than that implied by attendance at the clinic. The fact that they have now appeared among participants indicates increasing HIV spread outside risk groups and monitoring their prevalence among heterosexual survey patients now and in the future should—by indicating the upper limit of HIV infection in the general population—serve as a clear guide to the progress of the epidemic.

We are grateful for a three year Medical Research Council grant, awarded in April 1987. The study was coordinated and the analysis made with the help of Mrs Valerie Little at the Hepatitis Epidemiology Unit, Central Public Health Laboratory. The statistical modelling was done by Dr F Farrington PHLS Communicable Disease Surveillance Centre. The report was prepared by Dr Sheila Polakoff.

## Appendix

### PHLS AIDS STUDY IN STD CLINICS 1988

#### HBsAg & anti-HIV test results

Results of HBsAg & anti-HIV tests were recorded for 1179 homosexual men

Number of person with results of

Anti-HIV tests	HBsAg tests	
	Positive	negative
positive	64	4 6.3%
negative	1115	19 1.7%

The difference between the positivity rates for HBsAg among anti-HIV positives & negatives is statistically significant, as might be expected. However without the anti-HBs tests which were not

included in the study we cannot say whether this was the result of HIV depression of the immune system or of a higher exposure rate among the anti-HIV positive.

#### Syphilis & anti-HIV test results

Results of anti-HIV tests & at least two syphilis tests—VDRL, THA, FTA—were recorded for 1099 homosexual men

Number of persons with

Anti-HIV test results	Syphilis results	
	positive	negative
positive	43	4 9.3%
negative	1056	53 5.0%

No statistically significant difference.

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Accepted for publication 11 December 1989

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